

# STABILIZATION OF COAL INDUSTRY

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EXTRACTS FROM REPORT OF THE ROYAL COM-  
MISSION OF NEW SOUTH WALES, APPOINTED TO  
INQUIRE INTO THE COAL INDUSTRY

TOGETHER

WITH EXTRACT FROM SPECIAL CIRCULAR NO. 744,  
MINERALS DIVISION, BUREAU OF FOREIGN AND  
DOMESTIC COMMERCE



PRESENTED BY MR. BULKLEY

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# STABILIZATION OF COAL INDUSTRY

EXTRACTS FROM REPORT OF THE COMMISSION  
ON THE COAL INDUSTRY OF THE UNITED STATES  
AND THE DISTRICT OF COLUMBIA  
PRESENTED TO THE HOUSE OF REPRESENTATIVES  
IN SENATE REPORT NO. 100  
COMMISSION ON THE COAL INDUSTRY



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## SECTION I. APPENDIX No. 24

### THE COAL INDUSTRY IN VARIOUS COUNTRIES, WITH SPECIAL REFERENCE TO ATTEMPTED SCHEMES OF REORGANIZATION

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The following statement on the coal industry in Great Britain, Europe, and the United States of America has been prepared from publications by the economic committee of the League of Nations, supplemented by information received in response to inquiries instituted abroad on behalf of this commission, and by notes from other available sources. Other information was before the commission but, being confidential, can not be published.

#### WORLD POSITION

There are only three important countries of export—the United Kingdom, Germany, and Poland—so that the international problem is confined mainly to Europe. The export trade of the United States in normal circumstances is concerned mainly with Canada.

In spite of the progress made in recent years in the matter of mechanization, wages necessarily constitute a higher proportion of total costs than in most other industries. At the same time the opening up of new mines or the sinking of new shafts is an expensive and lengthy process which can not be readily undertaken in response to any sudden change in demand. As a result of these facts, any increase in demand has led in normal times to a rapid and substantial rise in profits, and any decrease to an equally rapid and substantial reduction. Profits, and wages under certain systems of remuneration, tend to fluctuate to an exceptional degree; and as the margin for immediate economies except out of wages is a small one, any depression in the industry is likely to affect wages or employment with exceptional rapidity and force.

The statistics of consumption in recent years show that the demand for coal is unusually steady and is but slowly affected by changes in price, and the uninterrupted and rapid growth in the output of coal during the quarter century which terminated with the general economic boom in 1913 was accompanied, except in the United States of America, by a steady upward trend of prices. In these circumstances, the profits reaped from coal mining were such as to induce a constantly accumulating number of companies to enter into the field of competition. Little incentive was given to economy in mining, to coordinated production or marketing, and to the study of alternative sources of power or alternative uses of coal.

Owing to the effects of the war the price of coal in 1919 and 1920 soared to unprecedented heights. A powerful incentive was then given to consumers to search for every means of economizing its use, and for every available alternative source of energy.

The most important post-war change which has led to the existence of a coal problem is the exceedingly slow increase in the world consumption of coal in the post-war period as compared with pre-war years. In the period 1886 to 1913 world consumption increased at a rate of rather more than 4 per cent per annum. In 1928, however, the world consumption of coal and lignite was only 4 per cent greater than in 1913 ("world consumption" here being taken as equivalent to world output). It follows that during the whole 15-year period world consumption of coal has increased by an amount not exceeding the normal pre-war expansion in one year; whereas in the same period the production of new materials, foodstuffs, and world trade has increased by over 20 per cent.

The most important factors contributing to this falling off in the general demand for coal are, firstly, the progress of technical improvements resulting in the economy of fuel in power production (for instance, improved methods of combustion; increasing indirect instead of direct use of coal for the generation of gas and electricity; and modern processes which make it possible to employ inferior grades of coal formerly considered as waste products); and, secondly, the development of the use of substitutes for coal in power production. The growth in the competition of oil fuel also has been very marked since the war.

The cumulative effect of these lines of development, namely, the practical application of science resulting in a diminution in the demand for coal, and the exploitation of their own resources during the war by countries hitherto dependent on external supplies for coal, has been the steady widening of the gap between demand and the immediate productive capacity.

It is this surplus capacity which is the root of the present coal problem. By "capacity" is meant the immediate power of existing mines to produce coal without the investment of any additional fixed capital. The "surplus capacity" is equal to the difference between the amount which existing mines, without any additional investment of fixed capital, could produce and the amount of actual output.

The lack of balance between capacity and consumption is thus responsible for the difficulties encountered in the European coal industry, and has led to the coordination of effort for the rationalization of production set out hereunder.

An account has been prepared of the principal features of the coal-mining industry, the difficulties that have arisen, and the measures adopted to overcome them, in the chief producing countries of the world, arranged in alphabetical order.

#### BELGIUM

Coal consumption in Belgium in 1927 amounted to 34,000,000 tons, whereas domestic production there reached only 27,000,000 tons. Costs of production are high, owing to the geological characteristics, which make working conditions extremely difficult. Before the war the coalfields in the south were the only ones worked. After the war, the new Campine coal field in the north was opened up and is already responsible for 9 per cent of the total Belgian production, and is far from having reached its maximum output.

## PRODUCTION

The production of coal in Belgium since 1909-1913 has been as follows:

	Metric tons		Metric tons
1909-1913 (average)-----	23, 260, 000	1924-----	23, 362, 000
1913-----	22, 542, 000	1925-----	23, 097, 000
1920-----	22, 389, 000	1926-----	25, 320, 000
1921-----	21, 750, 000	1927-----	27, 574, 000
1922-----	21, 209, 000	1928-----	27, 500, 000
1923-----	22, 922, 000		

The comparative progress of European production is set out in Table B (see page 43), attached to this statement, from which it will be seen that in 1928 Belgium had exceeded her pre-war production, whilst the United Kingdom's output was only 82.5 per cent of the pre-war amount.

## PRICES

The weighted average value of coal sold from the mines (including the estimated value of the coal used on the mines and supplied to householder employees), is shown hereunder:

	s.	d.		s.	d.
1909-1913 (average)-----	12	10	1923-----	24	8½
1913-----	14	11	1924-----	22	1
1919-----	38	2½	1925-----	18	4
1920-----	34	3½	1926-----	17	3
1921-----	33	3¼	1927-----	17	3
1922-----	27	1¼			

A comparison with other countries is shown in Table A, attached hereto.

## MECHANIZATION

Of the total output in 1927, of 27,574,000 tons 1,350,000 tons were won by coal cutters alone; 20,205,000 tons by hammer picks exclusively, and 742,840 by the combined use of coal cutters and hammer picks.

The output of coal obtained by machinery represented 81 per cent of the total Belgian output in 1927.

## INDIVIDUAL OUTPUT

Notwithstanding the diminution in the numbers employed (23,000 mine workers less in October, 1929, than in 1927), the production per shift for each hewer increased from 4,201 kilograms (4.13 tons) in 1928 to 4,380 kilograms (4.30 tons) in the first half of 1929.

## IMPORT LICENSES

In October, 1924, complications arising from the price of reparations coal made it necessary for Belgium to establish a system of import licenses on coal coming from Germany and the Netherlands, but the decree was temporarily rescinded owing to the cessation of British imports in 1926.

No duty is imposed on the importation of coal into Belgium.

## ORGANIZATION

(a) *Producers*.—Belgian collieries are not affiliated to any organizations influencing the activity of their members to an important extent; but they are grouped in associations by their directors. These

associations are united in a federation. Article 2 of the statutes of the federation reads as follows:

The object of the association is to deal with all questions of general interest affecting the Belgian mining industry. Its decisions shall only bind the associations composing it to the extent to which they have signified their assent thereto.

Certain collieries, under common financial control, receive general instructions, the effect of which it is not possible to estimate. At least two important groups of collieries, representing 40 per cent of the total output, are in this position.

(b) *Sales*.—According to evidence supplied to the League of Nations at a meeting of the mixed committee of experts on coal on September 30, 1929, a system of sales organization has been created recently in Belgium. There are five coal fields in Belgium, of which three in Hainault and the new Campine coal field have joined together to form the Belgian Coal Association. The association acts as a sales syndicate and is responsible for 75 per cent of the total Belgian production. This system is similar to that of the Rhenish-Westphalian Syndicate, in that the four coal fields comprising the association intrust it with the sale of all industrial coal, but coal intended for domestic consumption is left to the free organization of producers.

The remaining 25 per cent is produced in the Liege coal field, where the producers are grouped in an organization acting as a supervisory body which merely fixes prices and superintends the carrying out of decisions.

#### REGULATION OF WAGES

For over 10 years general fluctuations in wages in the Belgian coal-mining industry have been governed by the provisions of an agreement adopted by the joint national mines committee, which at present consists of 11 members representing the heads of undertakings and 12 members representing the workers. The president is a State official, the director general of the mines department in the Ministry of Industry, Labor, and Social Welfare.

The aim of the joint national committee, according to the Royal Order of January 24, 1920, that set it up, is "to find by collaboration with representatives of the associations, both of employers and of workers, a peaceful settlement of all questions connected with employment in mines."

In 1925, owing to the depression in the coal industry, the joint national mines committee undertook an inquiry with a view to modifying the formula governing wage fluctuations by the introduction of an economic factor, namely, the price of coal, which, since October, 1926, has thus influenced the rise and fall in miners' wages.

#### SETTLEMENT OF DISPUTES

Section 3 of the agreement referred to above, and the rules to which it refers, prescribe the procedure to be followed in cases of difficulty arising out of the application of the agreement. The dispute must be submitted to local joint bodies, regional joint bodies, or the joint national committee, according as it affects a colliery, a coal field, or all the coal fields. If a dispute can not be settled by the local body to which it is submitted, it is referred to the regional

body; similarly, if it can not be settled by the regional body it is referred to the joint national committee.

#### RESULTS SHOWN BY CONCENTRATION IN THE BELGIAN COAL INDUSTRY

Concentration proceeded from the two largest Belgian banks, whose object was—

(a) To establish a close cooperation between the collieries and the chemical and electrical industries.

(b) To bring about, by means of specialized organization, cheaper selling methods, at normal prices.

On January 5, 1929, there were constituted the "Syndicat des Cokes," which includes all Belgian producers of coke and coking coals, comprising 27 companies; and the "Comptoir de Veste des Charbons Industriels," which includes all the collieries in Mons, Centre, Charleroi, Namur, and Campine fields, comprising 48 companies, but excludes the Liege collieries.

Two central works also for the recovery of by-products were created, first, the "Societe de Carbonisation Central" for the treatment of coal and all other substances with a view to their decomposition or transformation into solid, liquid, or gaseous products. The other, the "Societe Carbo-Chimique," produces and sells all products related to the chemical industry, such as hydrocarbons and fertilizers.

#### RESULTS OF CENTRALIZATION AND NATIONALIZATION

*Production.*—The average monthly coal output slightly decreased from 2,259,000 tons in the second half of 1928 to 2,245,000 tons in the first half of 1929.

*Prices.*—Prices have risen considerably since the beginning of 1929, as shown in the following table:

	Dec. 31, 1928	October, 1929
	<i>Francs</i>	<i>Francs</i>
Domestic coals:		
Thro' coal—		
40 per cent.....	160	205
60 per cent.....	190	225
Anthracite Nean 20/30 mm.....	260	300
Half-bituminous:		
Nuts.....	260	310
Cobbles.....	250	300
Anthracite.....	300	325
Screened.....	215	250
Avoids.....	140	160
Industrial coal:		
Thro' coal, 35 per cent.....	160	165
Special smalls l. v.....	155	175
Smalls 0/40 mm.....	115	135
Unwashed duffs.....	60	120
Semiwashed smalls 0/35 mm.....	125	190
Washed peas 2/8 mm.....	130	180
Washed beans 10/30 mm.....	160	210

## CZECHOSLOVAKIA

## PRODUCTION

The production in Czechoslovakia (postwar territory) since 1909-1913 has been as under:

	Metric tons		Metric tons
1909-1913 (average) -----	13, 085, 000	1924 -----	15, 179, 000
1913 -----	14, 271, 000	1925 -----	12, 559, 000
1920 -----	11, 375, 000	1926 -----	14, 506, 000
1921 -----	12, 023, 000	1927 -----	14, 670, 000
1922 -----	10, 465, 000	1928 -----	15, 200, 000
1923 -----	12, 347, 000		

## MECHANIZATION

The following figures show the quantity of coal and lignite extracted by machinery as a percentage of the total production:

	1925	1926	1927
Coal -----	46.6	53.2	59.6
Lignite -----	11.1	11.0	10.1

## OUTPUT

The output (expressed in hundredweights) per shift has increased as under:

	1925	1926	1927	1928	1929, first quarter
Coal -----	16.03	18.99	19.58	19.96	20.25
Lignite -----	35.36	37.11	19.85	39.85	40.19

## RAILWAY RATES

In Czechoslovakia special railway rates are granted for export coal.

## IMPORT RESTRICTIONS

Imports into Czechoslovakia are confined to quotas, but there is no import duty.

## FRANCE

## PRODUCTION

The production of coal in France since 1909-1913 was as under:

	Pre-war territory	Postwar territory		Pre-war territory	Postwar territory
	Metric tons	Metric tons		Metric tons	Metric tons
1909-1913 (average) -----	39, 177, 000	41, 848, 000	1924 -----	44, 011, 000	
1913 -----	40, 057, 000	43, 847, 000	1925 -----	47, 048, 000	
1920 -----		24, 292, 000	1926 -----	51, 422, 000	
1921 -----		28, 212, 000	1927 -----	51, 779, 000	
1922 -----		31, 141, 000	1928 -----	51, 400, 000	
1923 -----		37, 683, 000			

During the pre-war period, consumption showed a regular increase, but national production increased much more slowly. Since the war consumption has steadily risen, except in 1921, a year of general crisis. Moreover, French production had fallen to such a low level that the question of markets did not arise. There has thus been a ready outlet for a rapidly increasing production and from Table B (page 43) attached to this statement, showing the comparative progress of European production, it will be seen that by 1924 France had reached her pre-war output.

The output of France is not sufficient to supply the country's requirements, and in 1928 the shortage amounted to well over 20,000,000 tons. The devastation caused by the war in the Herd and Pas-de-Calais coal fields accounted for a loss on annual output from the devastated mines exceeding 20,000,000 tons. Since 1925, however, as a result of reorganization, the output has exceeded the 1913 volume; in 1928 this excess amounted to 17 per cent, on the basis of postwar frontiers.

## PRICES

The weighted-average value of coal sold from the mines (including the estimated value of the coal used on the mines and that supplied to householder employees) is shown hereunder:

	s.	d.		s.	d.
1909-1913 (average)-----	12	8½	1923-----	20	4
1913-----	13	6¼	1924-----	19	4
1919-----	35	11	1925-----	16	1¼
1920-----	32	0	1926-----	13	11¼
1921-----	32	11½	1927-----	16	1
1922-----	28	2	1928-----		

A comparison with other countries is shown in Table A attached.

## ORGANIZATION

(a) *Producers.*—Coal owners are grouped into organizations for the various coal fields, the representatives of which meet at regular intervals. The collieries as a whole form a central organization, The Central Coal Mines Committee, founded in 1892.

Neither the coal-field association nor the central committee has power to regulate the output of the members. Frequent contact makes it possible to follow a common policy in respect of the main problems affecting the industry.

(b) *Sales.*—France is not a coal exporter from any field except Lorraine; consequently the need for the creation of sales syndicates has not been felt so markedly in France as in other continental countries. Except in Lorraine, there are no selling syndicates. Each mining company arranges its own sales, finds its own markets, and is left entirely free to fix prices which are arrived at between producers and consumers, merchants, or public services. Sales to important or organized consumers are generally arranged on fairly long-term contracts.

## SELLING PRICES

For a long time past it has been the policy of the French coal industry to maintain the greatest possible stability in selling prices. As the industry produces almost exclusively for the home market, this is not a matter of extreme difficulty. To achieve this stability,

the collieries in the same coal field have a common organization for the study of the market situation. When alterations in the scale of prices are found by those in the industry to be necessary or opportune, they are thus put into force simultaneously in the same locality, and sharp fluctuations are avoided.

The central committee of the coal industry does not intervene in the question of selling prices, which remain exclusively under the control of the mining companies. There is an agreement between the French collieries in the Nord and Pas-de-Calais and the Belgian collieries regarding the selling price of household coal in France. Recently the Nord and Pas-de-Calais coal owners and a number of importers of British coal have established an organization called Selling Agency for Screened and Compressed Coal for the joint distribution of household coal, briquettes, and boulets throughout 17 French departments of the center and west.

#### AMALGAMATIONS

The French law is on the whole unfavorable to combinations. Agreements between producers are forbidden, and although the law is not now interpreted literally, it tends to limit the scope of associations.

The reorganization of the coal mines in the devastated area was accompanied by the formation of large companies, and the number of undertakings in the Nord and Pas-de-Calais coal fields in 1927 was only 32.

In the reconstructed coal fields of the Pas-de-Calais the units of production are of the same order of magnitude as in Westphalia. In 1925 an output of 20,000,000 tons was produced there by only 16 undertakings.

A certain amount of combination has taken place between the coal-mining industry and metallurgical concerns, but no details as to specific agreements are available.

Three collieries in Lorraine, covering 10 per cent of the French output in 1925, recently formed themselves into a sales syndicate.

#### MECHANIZATION

The French mines in the Pas-de-Calais and in the Nord have been completely reorganized. In the latter district, 70 per cent of the coal was hewn in 1927 with the aid of mechanical power, and in the Pas-de-Calais 65 per cent.

#### OUTPUT OF WORKERS

It is stated that much remains to be done to raise the output of workers. As compared with 1913, the individual output was 14 per cent lower in 1927. This decrease is said to be the result of the rapid increase in the number of workers employed, and, still more, of the legal reduction of hours which progress in technical equipment has not yet been able to counterbalance. It has been suggested that the coal industry must therefore face this prospect and study the possibility of reducing its cost of production by improving the output of its workers, and must endeavor to achieve a maximum of elasticity in production.

## REGULATION OF WAGES

The regulation of wages, which are keenly fixed under a collective agreement for each coal field as a whole, is left entirely to the coal field organization which negotiates with the workers' representatives. No coal field applies in any form the system of a sliding scale involving the automatic adjustment of wages according to fluctuations in a simple or complex index number. In brief, economic factors are considered as well as changes in the prices of foodstuffs and services likely to affect the workers' standard of life.

Although there is no direct relation between the prices charged for coal and the agreed wages of miners, it has been found that over long periods there is a fairly close parallelism between changes in wages and prices.

## IMPORT DUTY

In France there is a general duty on the importation of coal amounting to 0.20 paper francs (approximately  $\frac{1}{2}$ d.) per 100 kilograms.

## RAILWAY RATES

Rates judiciously adapted, as the result of long experience, to the economic and geographical conditions of the country, were abandoned ruthlessly during the war and replaced by a single scale of charges obviously lacking in elasticity. The few corrections introduced later under the pressure of manifest necessities are of trifling importance. The opinion has been expressed that a methodical readjustment of an excessively simplified scale of charges might have an appreciable effect in restoring the markets for French coal.

## GERMANY

The importance of Germany as a coal-producing country may be gauged from the fact that about one-quarter of the entire world output of coal is raised within its boundaries.

## PRODUCTION

The production of coal (in metric tons) since 1909-1913 has been as under:

	Pre-war territory	Postwar territory		Pre-war territory	Postwar territory
1909-1913 (average) -----	165,470,000	121,118,000	1924 -----		118,829,000
1913 -----	190,109,000	140,753,000	1925 -----		132,729,000
1920 -----		131,356,000	1926 -----		145,296,000
1921 -----		136,214,000	1927 -----		153,598,000
1922 -----		129,965,000	1928 -----		150,900,000
1923 -----		62,225,000			

Table B, attached to this statement, shows the comparative progress of European production.

Although under the peace treaty Germany lost approximately 26 per cent of her coal resources, yet in 1928 from the reduced capacity the output was 90 per cent of the pre-war amount, whereas the output of the United Kingdom in 1928 was only 82 per cent of the pre-war quantity.

## PRICES

The weighted average value per ton of coal sold from the mines in the Ruhr (including the estimated value of the coal used in the mines and that supplied to householder employees) is shown hereunder—

	s.	d.		s.	d.
1909-1913 (average)-----	10	9½	1923-----	20	1
1913-----	11	9½	1924-----	14	5
1919-----	11	9½	1925-----	13	11½
1920-----	13	7	1926-----	14	4½
1921-----	10	5	1927-----	14	8
1922-----	--	--	1928-----		

A comparison with other countries is shown in Table A attached hereto.

## ORGANIZATION

The coal industry law passed by the German Reichstag in 1919 compelled collieries to join 1 of 11 syndicates which cover the entire country, and to sign a legally enforceable contract. These syndicates united into the Reich Coal Association, which is governed by the Reich Coal Council (Reichskohlenrat) or "parliament," consisting of 60 members representing the Government, owners, miners, large consumers, and coal merchants. Each producing district has its own organization and all of these are members of the Reichskohlenrat. This council directs the general commercial policy and manages the whole coal-mining industry of Germany under the supervision of the Reich, the powers conferred on which are exercised by the Minister for Economic Affairs.

Syndicates independently fix quota and sell at prices approved by both the Reich Coal Association and the Reich Coal Council. The Rhenish-Westphalian Syndicate sells a large percentage directly to large consumers and the balance through merchants. This method is followed approximately by other syndicates, with the exception of the Upper Silesia Coal Syndicate and that of central Germany, which sell exclusively through wholesale companies.

In a League of Nations publication ("Memorandum on Coal," Vol. I), it is stated that the coal industry is more highly organized in Germany than in any other country, but even there no general combination exists, partly because the coal areas are widely separated and have divergent interests. The official organization of the industry owes something to pressure from the State, which in certain cases has insisted on a degree of syndication.

But the central official organization, the Reichskohlenrat, the original function of which was price fixing, was concerned in 1927 mainly with watching imports and exports. Its functions are for the most part advisory.

## THE RUHR SYNDICATE

The objects of the Ruhr Syndicate, which provides the supreme example of concentration, are stated to be rationalization of the industry and the fixing of prices for each category of coal under three heads: (1) A stable minimum price; (2) the account price at which the syndicate buys from its members; and (3) a selling price which may be above or below account price.

Profits are distributed in proportion to the participation of constituent undertakings. Each mine has a consumption quota including

items (coal used at the colliery, local sales, miners' coal, etc.), which are excluded in estimating the sales quota. Production is then regulated on the basis of the consumption quota, to which is added a variable percentage of the sales quota. The selling organization varies for markets with or without foreign competition; in the former, the syndicate reserves to itself large clients and hands over the surplus to merchants and selling organizations; in the latter, the syndicate sells directly to large consumers and through intermediary syndicates to other buyers.

#### REGULATION OF OUTPUT

In Germany the most effective agency in eliminating the seasonal fluctuations that would exist despite the pressure of output on reserves has been the coal syndicates. Although the syndicates were formed primarily for the control of prices, they have aided in the stabilizing of output in at least two ways. One method of controlling prices has been the restriction, both of the total output and of the output of the individual company. Since, in the domestic market, an operator can dispose of only a fixed amount of coal and at a price fixed in April for the following 12 months, his only means of increasing profits is by decreasing his mining costs or by increasing output and exporting the surplus above his allotment for the domestic market. One method of decreasing costs is to work the mines at the highest efficiency and capacity all the year round, rather than seasonally in response to demand. Pressure is exerted on the coal merchants to force them to distribute their purchases evenly throughout the year in order that the coal producer will not have the problem of storing the surplus coal during the slack season.

One paragraph of the Rhenish-Westphalian Coal Syndicate's contract of sale with merchants provides: "If merchants do not take up full quantities from March to August, the syndicate is entitled to reduce by the same amount deliveries in other months." This provision has made it necessary for the merchants either to provide for the storage of coal or to induce the large consumers to make their purchases during the season of minimum demand. It is a policy that has encouraged the storage of coal, not by the mines, but by the middlemen or by the consumer. Further, the syndicate has tended to eliminate seasonal production by fostering the export of German coal, thus providing an outlet for the surplus output of the mines. Under the syndicate agreement there are no limitations, either on the price charged for export coal or on the quantity exported. In many cases the fixed price for the domestic market has been high enough to permit the producer to make substantial reductions in the price of coal for export, and thus undersell British coal in foreign markets. It has been a frequent charge by German manufacturing concerns that the price of German coal is higher in Germany than in some of the near-by countries.

No data are available for a comparison of regularity of output before and after the formation of the Rhenish-Westphalian Syndicate, undoubtedly the most important and the most highly organized and closely-knit association in the German coal industry, but contemporary comments on the industry indicate that one of the reasons for the formation of the syndicate in 1893 was to bring about a stabilization of output. It is true that in the period since 1893 German mines

have worked with greater regularity—probably with greater regularity than can be found in any other large coal-mining country. Since 1901 the average working year of the Prussian mines has been 307 days and no year in that period has fallen below 286 days.

Now that coal supplies exceed the demand on the home and foreign markets, and prices are falling, the economic organizations of the German coal industry, the Reichskohleverband and the Reichskohle-*le*arat, under the supervision of the Reich Ministry for Public Economy, exercise mainly advisory functions. The fixing of selling prices—formerly their principal task—is no longer practicable. The action taken by these organizations in relation to prices did not always meet with the approval of the industry. As in the case of all administrative fixing of prices, these organizations could only proceed on the basis of so-called objective standards, in this case the costs of production. It is thought that this criterion is not alone sufficient in any long view of the necessities of production; but that a rational business calculation requires higher prices in a period of brisk demand in order to provide against losses at times when sales are insufficient to cover costs of production. However, these organizations and also the workers' representatives on them did their best to meet the requirements of the industry as far as this was possible within the limits stated above.

#### CLOSURE OF MINES

In pursuance of its program of rationalization, the Ruhr industry closed down large numbers of unremunerative mines; in 1924-25 77 undertakings normally employing 60,000 workers went out of operation. Moreover, in order to reduce the costs of production to a competitive level, a large number of less productive seams were closed. Most of these mines and seams will never be worked again.

#### GAS SCHEME

The extension of its system of long-distance gas supply, to embrace a number of the biggest industrial cities in Germany, is reported by the Ruhr Gas Corporation (the company formed in 1926 by the leading coal, iron, and steel interests in the Ruhr) to be part of their program of rationalization.

The Ruhr Gas Corporation has now in operation a network of 450 kilometers of pipe lines conveying the gas, which was formerly a waste product of the Ruhr coke ovens, to cities as far distant as Hanover, while plans in hand provide for the extension of the service to Berlin and the North Sea coast at Hamburg. The sum of £1,500,000 has been spent on its system by the Ruhr Gas Corporation, which is financed by the New York banking firm of Dillon, Read & Co., and which has obtained a contract for the supply of gas to Cologne. In their first full year the activities of the Ruhr Gas Corporation increased German consumption of gas by 25 per cent.

#### OUTPUT PER WORKER

On January 1, 1924, the 8-hour day was introduced in Germany, and the output per worker has increased steadily from that date until in almost all coal-mines in 1927 it exceeded pre-war figures.

The output per shift in the Ruhr increased by the amounts shown in the following table:

	Cwt.
1913.....	18. 52
1926.....	23. 39
First quarter 1929.....	24. 55
Second quarter 1929.....	24. 98

#### MECHANIZATION

The increased output is not due solely to the longer working day and to increased individual output, but also to important results obtained from rationalization of the industry and development of mechanical resources which pushed forward with the utmost energy from 1924 onward and became fully effective in 1925 and 1926.

In the Ruhr mines more coal is now extracted by mechanical means than by manual labor. In 1927 only 49.6 per cent of the output was obtained by hand labor with blasting, while in 1913 only 5 per cent was obtained by mechanical means with blasting. The percentage of coal extracted by machinery in the Ruhr was 2 per cent in 1913; 48 per cent in 1924; 67 per cent in 1925; 83 per cent in 1927, and 86 per cent in 1928.

#### DISPUTES

The coal industry has suffered frequently from sharp disputes regarding wages and scales of payment, as well as from numerous interruptions of work due to unrest and strikes.

#### REGULATION OF WAGES

Since 1919 wages and other working conditions have been regulated for the industry as a whole by collective agreements, the provisions of which are "immutable," that is, they can not be modified by individual contracts of employment or wage agreements drawn up between employers and workers. Provisions concerning rates of wages are not to be found in these agreements, which may be described as general or basic agreements, but are set out in special wage regulations or price lists annexed to collective agreement and covering a particular class of worker. It is true that the wage regulations form part of the collective agreement, but they are independent of it and terminable at notice separately agreed upon, so that in the event of a wage dispute it is not necessary to terminate the whole agreement for the purpose of establishing new wage scales.

Each collective agreement, with its annexed wage regulations, applies to one German coal field; each is complete in itself and independent of the others. Hence they are not supplemented by a general federal collective agreement common to all coal fields. The contracting parties are always industrial organizations of employers and workers legally entitled to conclude collective agreements.

Although collective contracts and wage regulations are concluded on the basis of freedom of contract—there are no wage boards that fix binding wages—yet in practice they seldom come into existence as a result of unfettered negotiation and agreement. As a rule they are due to the official conciliation procedure laid down in the conciliation order of October 30, 1923. Under this order, when agreement as to wages can not be reached between the parties, one of

them appeals to the competent conciliation authority to act as a conciliation tribunal.

The conciliation authorities' proposals are the result of impartial judgment in which due regard is paid to the movements in the cost of living and the wage level in other occupations and in other coal fields. As regards the ability of the industry to bear the rates contemplated, consideration is given to the economic circumstances of the coal field concerned, and account is taken of the difference between the cost of production and net sales revenue, published balance sheets, the rate of dividend declared, etc. No fixed relationship exists, however, between wages on the one hand and the cost of living, coal prices, and net sales revenue on the other. Wages do not rise automatically with an increase in the cost of living or coal prices or net sales revenue; nor do they fall with a corresponding decrease. They can only be altered by denunciation and expiry of the collective agreement or the wages regulation.

#### RAILWAY RATES

The German railways have established special rates in coastal districts and for bunker coal to assist German coal in competing with that of England.

#### IMPORT AND EXPORT RESTRICTIONS

No import duty is imposed on the importation of coal into Germany. The import and export of fuel is at present prohibited, but in practice the export prohibition is not enforced. Imports of coal into Germany are regulated by mutual agreements with countries with which Germany has concluded commercial treaties.

#### RESULTS OF RATIONALIZATION

The results of rationalization in Germany—where production and wages have risen, and costs have fallen—are suggestive. For, despite this fall, Germany's production costs are now as high as those in England.

In 1924, just before Germany decided to put into practice the policy now known as "Rationalisierung" or rationalization, though the number of workers employed had increased since 1913 from 397,000 to 463,000 production had fallen from 114,487,000 to 94,411,000, while the stock of coal on hand had grown from 1,589,000 tons to 5,169,000 tons. Heavy losses were being incurred, and the future—failing drastic reconstruction—looked black indeed.

Worse was to follow. Demand in the home trade slumped. Production fell, and intermittency with concomitant rising production costs became general. Yet stocks of unsold coal mounted from the 5,000,000 mark in 1924 to 9,378,000 in June, 1925. Concerted action was decided upon. Limitation of output to the best seams, the regrouping and concentration of the mines and works, and the closing of parts of mines were the preliminaries to the closing of whole collieries with the attached plants.

During 1925 no fewer than 26 medium and large mines, employing 37,000 workers, were accordingly closed down—all for the specific

reason of cost reduction. Full time working in selected districts or on selected seams was far less costly than the disposal of intermittent labor over the whole mine or group, and the best of the seams or districts were maintained in a workable state, so that, immediately there was an improvement in trade, and an increase in the production quota for the mine, the output could be expanded accordingly. In some cases obsolete mines were purchased by the wealthier groups solely in order that their quotas could be transferred to larger modern mines.

This reconstruction of the industry—in which amalgamations played a not inconsiderable part—has been declared to have been facilitated by, firstly, the German mentality, and secondly, the fact that 90 per cent of the output of the mines was controlled by fewer than 20 companies.

Elimination of the competitively unfit preceded complete reequipment, where necessary, of the more efficient mines. The replacement, at one of the newest mines, of comparatively up-to-date boilers by an improved type so economical in fuel consumption that the capital cost was repaid out of savings in two years, is typical of this process.

Mechanization proceeded apace, at every point at which hand labor could be replaced or reduced. And at some collieries plant installed only two or three years earlier was superseded ruthlessly.

As a result, the number of workers employed fell from 463,000 in 1924 to 355,000 in May, 1926; and, although it has fluctuated since then, was no higher than 398,000 in December, 1927—altogether 155,000 fewer than in 1922. Mechanization, added to the superior skill of those retained in the industry, had raised the average output per shift per worker above and below ground in January, 1927, by 33 per cent compared with 1924, and the output of hewers from 37.4 hundredweight per day in 1924 to 48 hundredweight at the beginning of 1927—an increase of 27 per cent despite the reduction of half an hour in the daily working time.

The total output of coal in the Ruhr rose from 94,411,000 tons in 1924 to 118,000,000 tons in 1927, and exports to 20,000,000 tons, including reparations.

When the mines were reopened after the French occupation the situation had become so bad that at the beginning of 1924 wages expressed in purchasing power of money were actually less than they had been before the war. In the summer of 1927, with the cost of living about 50 per cent higher than that of 1913, the effective wages of all workers in the mines had reached 53 per cent above 1913.

Meanwhile, despite a very large increase in wages, production costs had fallen on the average from 16s. 8d. in 1924 to 13s. 5d. in 1926. Thus, Germany effected reorganization by rationalization.

#### FUTURE DEVELOPMENT OF THE INDUSTRY

The restriction on coal imports will have to be maintained until the German coal industry has recovered from the heavy losses which it has suffered in the last few years through the liquidation of the war

debts, with its effects on domestic and foreign trade, the period of inflation, the occupation of the Ruhr, etc. The unrest in the years immediately following the war and the reduction of the working day to seven hours have seriously hindered development. The loss of more than one-quarter of the German coal output and the obligation to deliver large quantities of coal by way of reparations created for some years an acute coal shortage in Germany, so that the mining industry has had to turn its whole energy to the enhancement of production, and was obliged to postpone urgently needed measures for the rationalization and modernization of the undertakings which had suffered depreciation through the war. In this matter, reorganization was further hindered by the enormous capital and current losses resulting from inflation and the occupation of the Ruhr. Since the return to more orderly conditions the industry has approached the work of rationalization with the utmost energy and with the use of all the resources available.

Much has been done already, but in the execution of the measures which still remain to be carried out, the industry is said to be hampered by the imposition of very high charges in taxes and transport rates.

Moreover, its capacity to compete with foreign coal in some parts of Germany and in foreign markets has been seriously reduced by the high costs of production. It is true that the German coal industry increased its exports as much as possible in 1925 and 1926 in order to dispose of stocks and to provide its personnel with work and wages. Owing to a strike in England, which continued for several months, and the long stoppage in the American anthracite mines, it was possible to bring the export figure for 1925 up to 18,500,000 tons. But, even so, the export figure remained far below the 1913 figure of about 46,000,000 tons, even adding reparation deliveries which in 1925 amounted to about 14,500,000 tons.

The opinion has been expressed that the future development of German coal production will depend largely upon changes in costs of production and conditions of competition and markets, and that, as things are at present, there appears to be the possibility of development.

#### POLAND

##### PRODUCTION

The production of coal in Poland (postwar territory) since 1909-1913, is shown in the following table:

	Metric tons		Metric tons
1909-1913 (average) -----	35, 922, 400	1924 -----	32, 280, 000
1913 -----	40, 972, 100	1925 -----	29, 081, 300
1920 -----	30, 702, 000	1926 -----	35, 747, 300
1921 -----	29, 894, 000	1927 -----	38, 084, 100
1922 -----	34, 631, 000	1928 -----	40, 600, 000
1923 -----	36, 098, 000		

Table B attached to this statement shows the comparative progress of production of European countries. (See page 43.)

The Iron and Coal Trades Review, October 25, 1929, contains the following table:

*Coal production in Poland*

Year	Output, metric tons	Output expressed as percentages of that of 1919=100	Percentage of the total pre-war pro- duction of the districts which now form Poland
1919.....	6,083,686	100.00	67.79
1920.....	6,411,745	105.39	71.45
1921.....	7,582,138	124.63	84.49
1922.....	23,946,555	393.62	-----
1923.....	36,131,556	593.61	88.10
1924.....	32,286,744	530.71	78.80
1925.....	29,061,682	477.70	70.93
1926.....	35,755,236	587.72	87.27
1927.....	37,912,011	623.17	92.53
1928.....	40,518,302	666.02	98.89

#### ORGANIZATION

The Polish coal industry supports a central organization which regulates delivery to certain destinations (including foreign); fixes prices and reductions to be granted to buyers and consumers; unifies conditions of delivery; and imposes fines on those mines which fail to observe the regulations.

The general collieries convention controls 98 per cent of the entire production, on the basis of a limited liability company. Votes to members are proportionate to output. The convention fixes minimum selling prices and quota, and controls the Polish customs area, including Danzig, also the traditional market in Germany, Czechoslovakia, Austria, and Hungary. Export elsewhere is unrestricted.

#### AMALGAMATIONS

Thirteen colliery companies in Upper Silesia have amalgamated to form six sales syndicates.

#### RAILWAY RATES

In Poland special railway rates are granted for export coal.

It has been stated that, despite the existence of conventions, there is a great amount of price cutting between coal owners, and coal is being sold at an economic price mainly owing to the assistance of the Polish railways which virtually give a subsidy of about 7s. per ton on exported coal. Polish coal was being sold early in November, 1929, f. o. b., Danzig at 11s. 3d. per ton. Had normal rail and demurrage charges, etc., been made on this coal, it is claimed that the coal would have had to be given free of charge at the pit head to allow this price at Danzig.

#### GOVERNMENT ASSISTANCE

The stoppage in the British coal industry in 192—represented a turning point in favor of the development of the Polish coal industry, which is assisted by the State in the form of large reductions in the rail charges for coal from the pits to the ports, new railway lines and port works, concessions in the matter of taxes and in other ways;

while the stabilization of the Polish currency in October, 1927, brought about a revival in the entire economic situation and put an end to the dearth of capital.

Foreign investors took advantage of the promising possibilities of investment and out of 33 undertakings which produce 97.3 per cent of the aggregate output of coal only 25 per cent represents purely Polish capital, and 37 per cent German capital. French capital represents a further 19 per cent, Anglo-American 11 per cent, and sundry foreign capital 8 per cent.

#### INDUSTRIAL DISPUTES

Since 1924 the industry has been spared any serious labor disputes, while the all-Polish coal convention established in 1925 assisted the industry over the critical year of 1927 and further strengthened its position.

In the circumstances, favored by the existing conditions, it has been possible for the industry to develop without hindrance and to enter into serious competition with other European countries. The opinion has been expressed that, while the industry only maintains its position in foreign markets by undercutting prices, by prices which result in a loss, further possibilities of reducing the costs of production are offered by rationalization and modernization, the growth of the inland demand, the extension of the railways, as well as finally by the conclusion of the commercial treaty with Germany. The maintenance of competition in the foreign markets is a vital condition for the State, as Poland's financial position stands or falls with her coal industry.

#### NUMBER OF MINES OPERATING

The number of coal mines in operation in Poland has remained almost without change as compared with the number in the same districts in 1913. There are 53 in eastern upper Silesia, 31 in the Dombrowa and 9 in the Cracow district.

#### LABOR SITUATION

On an average 113,734 miners were employed in all the Polish mines in 1927, and 112,133 in the first nine months of 1928, compared with 121,201 in the same areas in 1913.

#### INDIVIDUAL OUTPUT

With an average output for 333 tons per miner per annum for 1927 for the whole body of miners, the 1913 figures were almost reached (98.52 per cent), while in the case of the underground workers the average of 492 tons in 1927 represented 95 per cent of the 1913 result. The difference may be explained by the change in the proportion of the underground workers to the total number of miners employed.

As compared with the annual average output the output per shift of all districts shows a much more favorable result. In this case the pre-war figure was already reached in 1926, and in 1928 in Upper Silesia it amounted to 1.366 tons per shift (113.6 per cent of the pre-war average output), in the Dombrowa district to 1.082 tons (112.4 per cent) and in the Cracow district to 1.089 tons (109.6 per cent).

## HOURS OF WORK

Another factor in the slightly reduced individual yearly output in 1927 compared with 1913 was the reduction in the working time, which was  $9\frac{1}{4}$  hours in pre-war days in Upper Silesia, to  $7\frac{1}{4}$  hours at the time of the transfer of the territory, and remained at that figure until March, 1924, when the 8-hour shift was adopted.

## UNITED KINGDOM

## PRODUCTION

The production of coal in the United Kingdom since 1909-1913 has been as follows:

	Metric tons
1909-1913 (average)-----	273, 905, 000
1913-----	292, 043, 000
1920-----	233, 216, 000
1921-----	165, 871, 000
1922-----	253, 613, 000
1923-----	280, 417, 000
1924-----	271, 392, 000
1925-----	248, 067, 000
1926 (national dispute of 7 months)-----	128, 291, 000
1927-----	255, 767, 000
1928-----	242, 327, 000
1929 (on the basis of the first 9 months)-----	257, 600, 000

Table B, attached to this statement, shows the comparative progress of European production, indicating that whereas the output of the United Kingdom reached in 1928 only 82.5 per cent of the pre-war amount, France, Poland, and Belgium had recovered or exceeded their pre-war production.

## PRICES

The weighted average value per ton of coal sold from the mines (including the estimated value of the coal used in the mines and that supplied to householder employees) is as follows:

	s.	d.		s.	d.
1909-1913 (average)-----	8	9	1923-----	18	9 $\frac{1}{4}$
1913-----	10	1 $\frac{1}{2}$	1924-----	18	10
1919-----	27	4	1925-----	16	4
1920-----	34	7	1926-----	19	7
1921-----	26	2 $\frac{1}{4}$	1927-----	14	7
1922-----	17	7 $\frac{1}{2}$	1928-----	12	10

A comparison with other countries is shown in Table A, attached hereto.

## ORGANIZATION

In each coal field in the United Kingdom there is a district colliery owners' association. Of these, all except that in Cumberland are members of the Mining Association of Great Britain, the functions of which are "generally to watch and take action on behalf of the members in connection with all matters affecting or which may be likely to affect its members in the coal-mining industry, particularly matters which may be the subject of action by the State." The mining association possesses no power to deal with coal prices or the distribution of orders.

## GOVERNMENT SUBSIDY

The crisis in the coal industry in Great Britain has dominated the world situation ever since the granting of the nine months' subsidy in August, 1925. During the period in which the subsidy was in operation, the British industry was assisted in finding an export market, and in maintaining production at a higher level than would otherwise have been possible.

For the first five months the subsidy averaged over 2s. 6d. per ton of coal or about 17 per cent of the pit-head price. In the last three months it was 3s. per ton, and it enabled the collieries to show in that period an average profit of 1s. 6d. per ton, and wages to be maintained, while prices generally were somewhat reduced.

The royal commission of 1925 did not feel it to be its duty to express an opinion as to whether or not the grant of the subsidy was avoidable; but it recommended that the subsidy should not be continued as, in the opinion of that commission, the principle was wrong.

## CUSTOMS DUTY

No duty is imposed on the importation of coal into the United Kingdom.

## REGULATION OF OUTPUT AND PRICES

During the latter part of 1927, conferences were held in several districts to devise means of greater cooperation within the industry to deal with the abnormal conditions that existed. The industry was clearly suffering from overproduction, with consequent depression of prices, and increased costs of production due to irregular working. Broadly speaking, the problem was the same in all districts, but the suggested methods of dealing with it in the various districts differed.

In a report to Parliament in November, 1928, by the mines department, it is stated that of the various measures of cooperation, by far the largest in scope and in potential bearing upon the future welfare of the coal industry as a whole, are the district arrangements, which have been initiated recently in certain large areas of the coal fields to deal with overproduction, to regulate competition and prices, and to develop export markets.

*Scottish scheme.*—The first scheme of this character to be put into operation was that introduced by the Scottish coal owners on March 6, 1928, and provided for—

(a) A general levy not exceeding 6d. per ton on coal sold for inland purposes, excluding coal sold to auxiliary or associated undertakings and coal for colliery consumption.

(b) A special levy on coal for certain classes of consumers.

(c) The payment to collieries of compensation out of the funds raised by the general and special levies, on an agreed basis in respect of suspension or curtailment of a potential output capacity by closing a colliery or seam, or section of a seam, or by other means.

The scheme covered approximately 90 per cent of the Scottish output. Its principal object was to concentrate, in those pits which could best afford to trade under current conditions, the production of such amount of coal as the market was estimated to be able to absorb. This scheme came to an end in March, 1929, but replacement by another scheme of a rather broader character is under consideration.

*Midlands coal fields scheme.*—The second scheme was that covering the Midlands coal fields, which has been in operation since the beginning of April, 1928, and provides for—

(a) A levy not exceeding 3d. per ton on all coal raised.

(b) Regulation of output as follows:

(i) A basic tonnage for each member to be determined in the first instance by reference to the output in any year of the 15 years ended December 31, 1927, selected by him.

(ii) A quota (or percentage) applied each month (in advance) to the basic tonnage so arrived at.

(c) Imposition of penalties for exceeding the quota (if a member exceeds his quota in any month by more than 1 per cent, he is liable to a fine of 3s. a ton in respect of the excess tonnage, and in the case of systematic excesses heavier penalties may be applied).

(d) Financial assistance out of the funds raised by the levy and by fines, to be given to coal for export and foreign bunkers, arrangements being made that this assistance does not operate for the benefit of intermediaries.

(e) The establishment of a shipping bureau to watch the members' interests in the export markets.

It is claimed that about 90 per cent of the output of the coal fields to which the scheme applied is covered by the scheme and that it controls an output of over 100,000,000 tons a year.

The object of this scheme was twofold. It proposed to deal with overproduction, first, by expanding the number of export markets by means of assisted export prices, the financial provision for this being met from the levy on all coal raised in the coal fields covered by the scheme; and, second, by regulating output by means of the quota system.

*South Wales scheme.*—Discussions also proceeded at intervals throughout 1928 in South Wales with regard to the formation of a district scheme. The original proposal provided for—

(a) A levy of not more than 3d. per ton on all coal raised in South Wales.

(b) Grouping of coals and the fixing of minimum prices for each group.

(c) Compensation at the rate of not more than 2s. per ton in respect of shifts lost through loss of trade owing to the operation of the minimum prices.

(d) Fines at the rate of 2s. per ton for sales at prices below the minimum.

The object of the scheme in this coal field was to increase proceeds without any definite regulation of output and without necessarily closing down pits. During 1928 it was not found possible to bring the full scheme into operation. From the beginning of May, 1928, a system of minimum prices in the steam coal trade was introduced and continued throughout the remainder of the year.

Early in August, 1929, the South Wales Coal Marketing Association announced its decision to bring into force an amended scheme for the regulation of output and prices, the objects being—

(a) To regulate output of members' collieries according to the demand for coal.

(b) To fix and regulate minimum prices for any class or description of coal, and for this purpose to settle groups and allocate collieries, or classes of coal thereto.

(c) To compensate members for loss of output.

(d) To cooperate or form any working arrangements, amalgamation or association with any similar organization for purposes of output regulation.

This scheme embraces all collieries in the coal field. The "datum period" for the purpose of fixing the conventional output of each company is to be any one of the six quarters immediately preceding June 30, 1928, or alternatively the month of March, 1929 (adjusted to a quarterly basis) at the option of the owner. The regulation of output is to be on an annual basis. For the scheme to come into operation it must receive the approval of collieries producing at least 70 per cent of the output in the three months ended June, 1929.

In each of the three schemes outlined above the unit is a defined area of considerable size. This organization by districts in itself constitutes a notable development in the policy of British colliery owners, but the indications are that it may be only a step toward some scheme of cooperation on a still wider basis. It has already been agreed in principle that the various districts should consult together as to ways and means of bringing about cooperation not only between individual collieries in the same districts, but also between the districts themselves.

It is too early to attempt to assess the results, especially in view of the differences in the basis on which the several schemes rest, and of the fact that they have only been in operation for a comparatively short time.

The Central Collieries' Association, popularly known as the Midland area, and formerly the "five counties" scheme (which must not be confused with the central, national or coordinated interdistrict scheme recently discussed by the Government; the coal owners and miners), has to date obtained the greatest measure of success in its endeavor to rationalize the industry. Two serious difficulties are the local nonassociated colliery owners to whom it is likely that legislative compulsion will be applied, and the delimitation of regional spheres of influence, since in this matter the members of the association in one district may be at a disadvantage compared with competitors in an adjacent district who are not working under output restrictions. It has been suggested that the solution of this difficulty is in the formation and adoption of an inter-district scheme. Subsidized by coal owners, exports in Midland areas resulted in 1,500,000 tons increased exports from Humber ports in 1928, and 1929 2,500,000 tons more than 1928.

The following is an outline of the provisions of the bill now before the House of Commons:

Part I proposes to regulate the production, supply, and sale of coal by means of a central coordinating scheme for the whole of Great Britain and district schemes for all colliery districts, and these schemes when approved or made by the board of trade, will have statutory effect.

The bill contemplates that these schemes will be operated by the colliery owners themselves, and it provides for the schemes being so framed as to ensure that within reasonable limits the quantity of coal

offered for sale by any colliery and the price charged for it shall accord with the state of current demand.

The scheme may also provide for enabling financial assistance to be granted from within the industry itself to any branch or branches of the industry which are considered by the industry as a whole to require such assistance, in order to extend or maintain the general volume of trade. The interests of the several districts as between each other and the interests of the individual colliery owners in the several districts are safeguarded by provisions for independent arbitration.

The public interest is protected by the fact that all details of every scheme require to be approved by the board of trade, and, further, by the provisions made in the bill for the formation of a national committee of investigation, containing representatives of consumers, whose duty it will be to inquire into any complaints made as to the operation of the central scheme and for similar committees with similar duties in every district. These investigation committees are given the necessary powers to enable them to obtain information relevant to their inquiries, and provision is made that if complaints reported by them to the board of trade as to the operation of a scheme in any district are not rectified to the satisfaction of the board, the board may direct that the scheme shall cease to have statutory effect, and that, unless they are satisfied that voluntary arrangements have been made in the district for securing the necessary cooperation with other districts and compliance with the central scheme, the board may make a new scheme for the district.

#### AMALGAMATIONS

Following the report of the royal commission of 1925, considerable progress has been made toward local concentration. That commission found that the "amalgamation of the present small units of production was both desirable and practicable," and "large financial advantages might be gained by the formation of, in particular, co-operative selling agencies."

Part I of the mining industry act, 1926, contains provisions to facilitate the combination of colliery undertakings. It gives power to coal-mining undertakings to prepare schemes for the purpose and to submit them, through the mines department, to the railway and canal commission for confirmation. The court is required to satisfy itself that the scheme makes for the more economical and efficient working, treating, or disposing of coal, is fair and equitable to all parties, and generally is in the national interest. A scheme which is confirmed by the court can vary the memorandum and articles of any constituent or absorbed company, and is in all respects binding upon all persons. No stamp duty is payable in respect of it, or on any debentures or in respect of any share or loan capital which is issued in pursuance of it, or on any conveyance, assignment, or transfer of any of the property or securities of any constituent or absorbed company which is made in pursuance of it.

The power given to the court is to confirm a scheme, or to refuse to confirm it, or to confirm it subject to modifications. Perhaps the most novel and important feature of this part of the act is that, subject to certain specified exceptions, the power of the court to con-

firm the scheme is the same whether it is submitted with the concurrence of all the constituent undertakings, called in the act an "amalgamation," or whether one or more of the undertakings is opposed to it, called in the act an "absorption." One or more colliery undertakings, which considers that some form of combination with some other colliery undertaking or undertakings will make for greater economy and efficiency for the unit as a whole, may apply to the court to compel such other undertaking or undertakings to fall in with the scheme. No undertaking can be compelled against its will to enter into any scheme which provides for the separation of the treating or disposing of coal from the working of it; no undertaking which operates a coal mine not as its primary object but as an ancillary to its other business (for example, iron and steel manufacture) can be compelled against its will to enter into any scheme which provides for the separation of the coal mine from the rest of the undertaking. But with these exceptions the court can, if it considers the case proved, make an order confirming a scheme and binding all persons affected by it, whether they are willing participants or not.

Schemes of "amalgamation" or "absorption" are not restricted to any specified form. It is not necessary in every case, for instance, that the properties and businesses of the constituent concerns shall be united in a single ownership. When the circumstances permit and the court approves, it is sufficient that the scheme provides for unified control through share ownership.

Subject, however, to the exceptions which apply to "absorptions," a scheme may embrace either the whole of any colliery undertaking, or it may be limited to part of it (for example, it may exclude its brickworks); or it may provide merely for the joint working of one or more departments of the undertakings (for example, selling, pumping, power supply, etc.) to the exclusion of others.

If the court proposes to make any modification in a scheme, the promoters are assured by the act of notice and of the opportunity to withdraw.

Since the passing of this act, 18 separate schemes of amalgamation have been effected between 59 undertakings, involving 191 pits normally employing 142,000 men. This number was subsequently reduced to 14 by further amalgamations.

Three other schemes came into operation during 1929, but details are not available. Only five schemes have been referred to the railway and canal commission. No compensation was paid by the Government, but in cases submitted to the commission, terms of the merger, including any compensation, have to be approved by the commission.

It is stated that the existence of compulsory statutory provision has stimulated voluntary amalgamations, which have been encouraged also by the stamp duty relief referred to above.

In the organization of the future, it is difficult to say how far the merchant or exporter will merge his identity with the producer. In recent years the distributive trades have acquired large interests in collieries, and there is a distinct tendency in the London trade toward a grouping of businesses and the establishment of formal relations with the district marketing schemes. The Central Collieries' Commercial Association, which has already placed the Humber exporters upon a tributary basis, is now engaged in negotiations with various branches of the distributive trade. Efforts were made to affiliate

even some of the foreign importers' associations to the "Five Counties" scheme, but here the difficulties are much greater, although a coordination of the district marketing schemes might bring this extension within practical limits.

## NUMBER OF UNDERTAKINGS

The following statement shows the number and output of individual undertakings in the United Kingdom producing coal as the principal product for 1928 (the latest period for which particulars are available):

Undertakings employing—	Number of undertakings	Output (tons)	Percentage of total output
100 or less persons.....	649	2,474,907	1.0
101-500 persons.....	168	10,012,063	4.2
501-1,000 persons.....	121	20,572,320	8.7
Over 1,000 persons.....	295	204,106,909	86.1

Compared with information given in the report of the Royal Commission of 1925, the above statement shows a reduction in the number of mines, and undertakings from about 1,400 in 1924 to 1,233 in 1928, primarily due to the fact that a large number of small undertakings have gone out of production.

It shows also that a larger percentage of the output is being obtained from the bigger collieries, practically 95 per cent, being produced in 1928 by undertakings employing over 500 persons, as compared with 93 per cent in 1923.

## CLOSURE OF INSUFFICIENT MINES

The Scottish scheme which lapsed in March, 1929, was the only scheme with a definite provision whereby the closure or curtailment of operations of insufficient mines could be effected in the interests of the industry by payment to the owners of these mines of compensation from a levy based on coal sold for home consumption. The closure of inefficient mines is, however, regarded as an essential point in the improvement of the general economic position.

It has been pointed out that wages form about 70 per cent of the proceeds of a mine, and that it is difficult to find a stronger inducement for the closing of uneconomic pits than this fact; and further, that it should be realized that temporary underground difficulties in many cases form the main reason for low proceeds, so that the uneconomic pit of to-day may be the economic pit of next week or next month and vice versa. Yet the cry for the closing of "uneconomic pits" has been used by the Miners' Federation and the press in criticism of the mine owners.

Of the mines which have restarted since the stoppage of 1925, 772 pits employing 83,800 workers have been closed. In addition, 317 new pits employing 4,600 men have been opened and closed since 1926, chiefly in the exporting districts; and, of the new pits opened, 251 are still working, most of which are small.

The persons employed in the industry in 1928 were 85,800 less than in 1927, but 1929 figures were estimated to show an increase of 6,000 over 1928.

#### TRANSFERENCE OF SURPLUS WORKERS

Toward the end of 1927 the Government appointed an Industrial Transference Board for the purpose of finding other occupations for workers, and in particular for miners, for whom opportunities of employment in their own district or occupation were no longer available.

The facilities available to unemployed mining workers for training and transference are summarized hereunder:

(a) *Transference within Great Britain—Employment exchanges.*—All facilities for transference within Great Britain rest primarily upon the employment exchange system, which provides offices in all areas of any industrial importance. The services of the exchanges are available to all employers and workers, irrespective of area and occupation. If an employer's requirements can not be satisfied locally, suitable unemployed workers in other localities can be put into touch with the vacancies. Any worker who takes employment at a distance through the medium of an exchange may receive a railway warrant—the cost of which is subsequently recoverable—to enable him to travel to his new employment. Under certain conditions applicants may obtain a remission of a certain proportion of their traveling fare.

*Grants to married men.*—Financial assistance is afforded at the discretion of the Ministry of Labor to all genuinely employed married men who wish to remove their households permanently to a proved employment in another area. Under the scheme the Ministry of Labor pays both a free grant toward lodging allowance and incidental expenses of removal and also the reasonable costs of the removal of the family and household effects.

*Special loans to single men from the depressed areas.*—In addition to the facility mentioned under heading (a), single men obtaining work either through the bureau or independently may, under certain circumstances, receive, by way of a loan, a limited sum of money to meet their personal needs during the period between their arrival at the new place of employment and the first payment of wages.

*Resettlement of married miners in forest holdings.*—A limited number of forest holdings is set aside for married miners with families in the depressed mining areas, and financial assistance by way of a free grant and loan is available to enable families to remove to and equip their holdings.

(b) *Training—Juvenile unemployment centers.*—The object of these centers, conducted by the local education authority, is to maintain and improve the general employability of boys and girls, 14 to 18 years of age, while they are out of work. Since the autumn of 1927, special efforts have been made to extend and develop the system in the depressed mining areas. Those areas are now covered with a network of centers, so that almost every unemployed boy living within them can travel daily to a center. In certain circumstances traveling expenses may be paid. Boys selected for transfer are given free traveling facilities to their new place of employment, out of government funds. Lodgings are found for

them and arrangements are made to maintain contact with them in their new environment.

*Training of men.*—Training for unemployment is carried out mainly in nonresidential areas. The training is reserved for men between the ages of 18 and 32, and about 90 per cent of the places is reserved for men from the depressed areas. While in training, men attending a nonresidential center receive in addition to their unemployment benefit, a free midday meal on week days and a weekly allowance of 2s. 6d. Men from a distance have lodgings found for them near the center and receive no extra allowance.

*Transfer instructional centers for men.*—The object of these centers is to improve the chances of employment of men who have been out of work for a long time in the depressed areas. Married and single men, selected by the department, as likely to profit by the course, are eligible. The aim of the course is to bring each man into the physical condition necessary for obtaining and keeping a job, and to revive habits of good timekeeping and steady work. Allowances are similar to those received by men attending the ordinary training centers for home employment.

*Training of women and girls.*—Centers exist for the training of women and girls from the depressed areas for domestic work. A maintenance allowance of from 10s. to 20s. per week is paid to the trainees.

*Preliminary farm training for employment overseas.*—The ministry of labor has three permanent and three quasi-permanent farm training centers. The course is designed to eliminate men who, judged by the test of life and work under farm conditions, are not likely to succeed in the dominions, and to teach those who are found suitable so much of the rudiments of certain farm operations as will enable them to settle down more quickly on the land, and will make them of immediate value at the outset to the farmer. Traveling expenses to and from the man's home to the centers and to the port of embarkation are paid. At the center, trainees for overseas receive full board and lodging, an allowance of 5s. per week, and a small amount of kit. Trainees proceeding to Australia can obtain no advance in respect of passage, landing money, and expenses on arrival.

#### RESULTS

Up to the present some 30,000 miners have been officially transferred and a large number have transferred themselves. Over 50 families had been settled in forest holdings by the middle of February, 1929. Since the first training center was opened in 1925, 7,290 men have passed satisfactorily through the centers, of whom over 90 per cent are known to have found employment. Approximately 220,000 boys have passed through the juvenile unemployment center since April 1, 1925. Up to the end of January, 1929, 3,235 men had completed courses of training for employment, and had proceeded overseas—1,770 to Australia and 1,465 to Canada.

There has been some criticism of the scheme in Great Britain on the grounds that the industrial transference board has not succeeded in its objects, mainly owing to various practical difficulties, such as housing and the mentality of the individual. The artificiality and the precipitous nature of the movement are said to have been hindrances to its successful outcome. Again, it has been contended that the industrial

transference idea has broken down through being established in too hurried a fashion, and giving rise to a good deal of suspicion that the scheme is not human enough. Too little consideration, it has been claimed, was given to the social necessities of transferred men and to the permanency of the industrial job into which they were transferred.

#### MECHANIZATION

The mechanical equipment of collieries is improving, the use of electricity is extending, and more conveyors are being installed.

The mechanical hewing of coal has increased in Great Britain from:

	Per cent		Per cent
1913.....	8.5	1923.....	17.2
1919.....	12.0	1924.....	18.7
1920.....	13.2	1926.....	22.0
1921.....	14.1	1928.....	26.0
1922.....	15.3		

Fifty-nine per cent of the coal in Scotland was obtained by mechanical means in 1928.

In the United Kingdom the mechanical pick, so largely employed in Germany, and on the Continent generally, has not been adopted generally except in the hard seams, but is significant that it was in use at 672 mines in 1928 as compared with 557 in 1927.

With regard to conveyors, it is not easy to establish a comparison with former years, but 28,000,000 tons of coal, or 12 per cent, of the output, were transported in 1928 by conveyors installed in 430 mines.

The rapid development of "intensive mining" has been hampered considerably by the difficulties inherent in the introduction of changes in traditional methods of working. The system involves the conversion of a "hewer" into a "filler," and it is a question whether the old statutory requirement that the wages of the miner shall be paid by the weight of mineral gotten really applies to these new methods; the latter are adapted to a yardage basis rather than a tonnage basis of payment, but it is conceivable that the workmen will resent a return to anything resembling the old "buttygang" system. The immediate difficulty, however, has been in convincing the workman that when he is asked to change his pick for a shovel it is reasonable to fix a lower tonnage rate, on account of the increased quantity of coal which he is able to handle. It has been found that, given an efficient lay-out and favorable conditions, a reasonable output per filler will range from 10 tons per shift in a thin seam to 15 tons or more in a thick seam, or nearly three or four times the output per collier when the coal is got and filled by hand.

Though generally speaking the miners do not resist the introduction of machinery into the mines, it is stated that colliery companies inevitably meet with great difficulty from the miners in the fixation of rates and that after asking first for the same rates for output as before machinery was installed, the miners usually agree to a trial run of the machines as a basis for the fixation of new rates. Generally after the new rates have been assessed, the output from the machines rises rapidly with consequent increments in the miners' income. This is stated to be a general occurrence.

## PREPARATION OF COAL

In 1928, no less than 60,000,000 tons of coal, or 25.4 per cent of the total output of salable coal, was treated in washing and cleaning plants at collieries or coke ovens. Of this quantity 20,000,000 tons of coal, treated at 100 plants, came from more than a single colliery, showing both the effect of the amalgamation movement and the extension of the system of blending.

The day is undoubtedly approaching when coal will be sold generally as a treated product. Perhaps the best example of this tendency is to be found in America, where the Pittsburgh Coal Co., by means of a chain of modern wet and dry washing plants, is in a position to supply customers with coal of specified composition. If such a practice should become general it is not too much to say that some of the obstacles that now impede the coordination and rationalization of coal-mining operations would vanish. It is a development that is being assisted very materially by the changes now gradually taking place in regard to carbonization—changes that are only being held back by the failure of the processes to adopt themselves entirely to commercial needs.

## DERATING ACT

During 1928 the first stage of the Government scheme of derating of productive industry came into operation. Under this scheme for adjusting the existing relationships between national and local finance it is intended that all productive industry shall be relieved of three-quarters of the amounts ordinarily payable as local rates. The railways participated in this scheme from December 1, 1928, on the understanding that the relief they obtained would be used for lowering railway freights on certain selected commodities, including coal, coke, and patent fuel, upon which the burden of high railway charges had fallen heavily. Following representations made by the coal industry, the relief to be accorded was concentrated on coal, coke, and patent fuel passing over the public railways for shipment overseas (including that used for foreign bunkers and bunkers for fishing vessels) and coal, coke, or patent fuel for iron and steel works. From December 1, 1928, a rebate of  $1\frac{1}{2}$  per cent per ton added to 25 per cent of the remainder of the carriage charges on these commodities was granted; these concessions being estimated to be equal to 7d. per ton, on the average, on coal exported and 10d. per ton on coal for iron and steel works. In addition, a rebate of 10 per cent of the carriage charges was granted on mining timber and on iron and steel used for propping or shoring purposes in mines.

## OTHER GOVERNMENT ACTION

Other Government action tending to improve the economic position includes—

(a) An agreement of the mining association with the Ministry of Labor restricting the recruitment of adult workers for the coal industry.

(b) The imposition of 4d. per gallon tax on imported hydrocarbon oil to encourage the use of coal oil.

(c) Government assistance under the mining act, 1920, toward cooperative mine-drainage schemes by bringing the parties together and giving compulsory sanction to financial provisions.

(d) Technical assistance through the fuel research board.

#### WAGES

The national wage agreement of 1924 provided that "from the proceeds of the industry" there should be deducted—(a) the cost of "standard" wages (approximately those prevailing in July, 1914), (b) the cost of production other than wages, (c) the standard profits equivalent to 15 per cent of the cost of standard wages, 88 per cent of the surplus then remaining being applied as an addition to standard wages and distributed as a percentage increase. There was also a provision that the wage payable should not be less than 33½ per cent above standard.

At every colliery in the whole of the British coal fields the wage paid to the individual workman, whether pieceworker or day-wage worker, is made up primarily of a basis rate applicable to the work he performs or to the class to which he belongs, to which is added a certain percentage thereon as determined in accordance with the provisions of the agreement for the whole of the district in which the particular colliery is situated.

The royal commission of 1925 recommended a national wages agreement applying both to the principles of the determination of economic wages in the industry, and to the determination of a general level of minimum wages. District agreements are now in force and there is no general level of minimum wages.

The existing basis of wages fixation by districts is favored by the Mining Association of Great Britain, which considers that no national agreement can cover adequately the divergencies in conditions existing in different districts. The peculiarities of individual districts necessitate separate agreements for each district, and the national agreements of 1921 and 1924 failed largely because the Miners' Federation refused to face the facts of these divergencies which determine the economic conditions of the industries.

Wages under the old method fluctuated with the selling price, but the present method takes into account costs of production, and with this the Mining Association of Great Britain is generally in agreement reserving, however, the criticism that the existing method does not make satisfactory provision for the introduction of new capital.

The miners are said to regard the present method of wage fixation as being unsatisfactory for several reasons. The first was due to suspicion because the auditors could only work on figures supplied by the owners. Secondly, on account of the possibility of owners selling to subsidiary companies which might arrange payments to themselves at an uneconomic figure. The third objection was that the owners might through bad management waste money in development, thereby reducing profits and the surplus of which a proportion is added to standard wages.

The main improvement desired by the miners was a local minimum wage, that minimum to become the basis upon which the wages fixation scheme would operate. The main objection to fixation by districts was that such a scheme incurred the undercutting of prices

where the supply of coal was in excess over demand, with resulting intensification of internal competition, and consequent depression of the industry.

#### DISPUTES ON CONCILIATION COMMITTEES

Although the royal commission of 1925 recommended the establishment of pit committees, and the mining industry act, 1926, gave the necessary authority, no applications have been received by the board of trade from any mine desirous of forming such a committee. Thus, although in the following statement from the mines department colliery disputes are said to be discussed initially "by the pit committee or a local workmen's deputation with the management of the colliery," no pit committees have been set up, and the alternative—workmen's deputation to management—is the usual form of preliminary discussion prior to reference to the district conciliation boards, which have existed for many years and appear to have provided satisfactorily for the settlement of local disputes. The impression gained is that the mines department considers these boards to perform a very useful function.

The following statement has been supplied by the mines department:

For general administrative or joint agreement purposes the British coal-field is divided into 21 separate districts and, subject to a few unimportant exceptions, there is established in each of these districts a conciliation board consisting of an equal number of owners' and workmen's representatives. Each board meets whenever necessary at the request of either the owners' or workmen's secretary, and deals with matters of a general character relating to wages, conditions of employment, and such disputes at the constituent collieries as come within the purview of the particular board.

Every such dispute arising at the various collieries must in every instance be discussed in the first place by the pit committee or a local workmen's deputation with the management of the colliery in question with a view to effecting a settlement, and it is only when the parties directly concerned fail in this effort that the matter in dispute can be dealt with by the district conciliation board.

If the board is satisfied that the dispute is one with which they should deal, they generally appoint one or two members from each side to investigate, and, if possible, settle the matter. In some district agreements provision is made, in the event of the appointed representatives failing to agree, for the parties to appoint an umpire or neutral chairman, whose award is final and binding on both sides.

Subject to the observance of certain general principles and to the irreducible wages minima provided in each of the district awards made under the coal mines (minimum wage) act, 1912, each separate colliery or colliery undertaking in each district arranges the basis rates of wages to be paid to the various grades of labor at the particular colliery. The conditions with respect to general wages, rates, and conditions of employment of persons employed at the mines in each district are governed by means of joint agreements which stipulate, inter alia, the minimum percentage to be added to the large variety of basis rates and also the periodic adjustments above this percentage which may be justified by the financial results of the industry in each district from time to time. Most of the conciliation

board agreements also make provision for the appointment of an independent chairman from outside the board. Questions to be dealt with by each board must in the first place be submitted to and considered by the board without the independent chairman. If, however, the parties can not agree on questions arising out of the operation of the district agreements, such questions are then submitted to the independent chairman for decision.

The opinion has been expressed that these district conciliation boards are thoroughly effective instruments in the settlement of disputes in any district; and that naturally a better spirit of negotiation exists in district circles than between the national bodies representing owners and miners. Pit committees of a formal type are, however, not considered necessary, and there has been no demand for them. Informal bodies of miners are at present free to approach the management, and this freedom to some extent would be reduced if formal pit committees were elected, paid, and regularly called together. It is even conceivable that the existence of these organized committees might encourage the raising of difficulties.

Although the district conciliation boards are thought to have proved extremely useful, criticism has been expressed at the delay which has occurred, since delay in the consideration of industrial disputes is always dangerous and unsatisfactory. A more favorable attitude, however, has been noticed in regard to pit committees, on the ground that where they exist stoppages become much less probable. The benefit from such committees is claimed to be that recommendations can be made by them to the management, which can deal with the workmen, and thus give the men themselves a feeling of association with the management of the mine.

Part III of the bill at present before the House of Commons authorizes the board of trade to set up a coal mines national industrial board with powers to investigate and report upon any dispute as to the terms of a proposed agreement for the regulation of the wages or other conditions of colliery workers in any district where there has been a failure to settle the dispute in accordance with any arrangements in force in the district.

#### WELFARE

The miners' welfare fund originated from a recommendation of the coal industry commission of 1919, that a levy of 1d. per ton of coal raised should be made, and the fund so derived should be applied for the improvement of housing and amenities of each colliery district.

The mining industry act, 1920, authorized the levy to operate for five and a half years from 1920, and by the mining industry (welfare fund) act, 1925, its extension was authorized for five and a half years longer. The purposes of the funds so raised were extended by the 1920 act to read, "purposes connected with the social well-being, recreation, and condition of living of workers in or about coal mines, and with mining education and research." The provision of dwelling houses was excluded.

The mining industry act, 1926, also authorized the collection of a levy amounting to 5 per cent of royalties derived from coal. Until the board of trade otherwise directs, the income estimated at £250,000 per annum from this special levy is to be applied solely to the provision of washing and drying accommodation at the pit head.

The fund is controlled by the miners' welfare committee, originally consisting of five persons but now of nine, three being representatives of the miners, two of the owners, one of the royalty owners, and the chairman and two other members appointed by the secretary for mines.

For purposes of administration, the local fields are divided into 25 districts, in each of which consultative bodies known as district welfare committees, representing owners and miners, consider and advise on all applications for grants before these are dealt with by the central committee.

The annual income from the output levy at 1d. per ton is approximately £1,000,000, and from 1920 to September, 1929, the amount so raised has amounted to £8,458,000. Four-fifths of this levy forms a district fund, and the remaining one-fifth a general fund.

The district fund is devoted to local purposes, the total expenditure being—

Indoor and outdoor recreation.....	£3, 000, 000
Pit welfare.....	150, 000
Health.....	1, 800, 000
Education.....	52, 000
Administration.....	53, 000

The general fund, which, for 1928 amounted to £195,000, was devoted to—

Pithead baths.....	£31, 000
Research.....	54, 000
Education.....	107, 000
Administration (miscellaneous).....	16, 000

The royalty levy at 5 per cent for 1926, 1927, and 1928, amounted to £560,000, which was to be devoted wholly to the provision of pit-head baths for collieries with a probable life exceeding 15 years.

The maintenance cost of the baths varies from 3½d. to 1s. 1d. per head per week, and is defrayed by the workmen, the owners, or by joint agreement.

While the general effect of the miners' welfare scheme is considered good by some who are engaged in the industry, it has been claimed that there is no specific proof that it has improved efficiency or industrial relations. In several areas the miners show an increasing lack of interest, and a larger amount of the fund is now devoted to maintenance charges, a result, however, that may be due, in fact, to the present economic depression in mining areas.

The attitude of the miners toward the welfare scheme is wholly favorable, but they would like to see it improved by bringing under it some idea of pensions for miners. They assert that, where large welfare schemes are in operation, there has been a most beneficial effect on industrial relations which has in turn influenced output. The fact that welfare schemes are jointly managed by both the management and the miners, it is claimed, leads to better understanding.

#### PROFIT SHARING

The royal commission of 1925 recommended that profit-sharing schemes, providing for the distribution to the workmen of shares in the undertakings, should be adopted generally in the industry and should be made obligatory to statute.

The mining industry act of 1926 authorized any colliery company, notwithstanding anything in its memorandum or articles of association, to establish a profit-sharing scheme. Although it may be contended that the existing wages-fixation procedure is on a profit-sharing basis, this method is not profit sharing in the ordinary sense of that term. A note furnished by the mines department indicates that the recent position has not favored the introduction of these schemes, and it is understood that little has been done toward their introduction. Perhaps a sound explanation of the reason for this delay is to be found in the table of costs, proceeds, and profits per ton of coal disposable given in the attached statement. It will be seen from this table that except during four months—January to April, 1929—no credit balance has been made in the industry as a whole from the year 1927 onward.

The introduction of any profit-sharing scheme would be a matter for individual collieries rather than one of a general character covering a district or even a group of collieries.

A British authority has contended that coal mining is, to some extent, a peculiar industry, and that, even if the miners did favor profit sharing, there is little scope for its application where the proceeds are divided on the basis of 15 per cent profit and 85 per cent wages.

The miners are said to be strongly opposed to profit sharing, and would much rather have some say in the general control of the industry. Profit sharing, it is stated, has been temporarily successful when profits were high, but the moment depression appeared in the industry, profit sharing lost its significance.

*Costs, proceeds, and profits per ton of coal disposable*

Period	Costs		Proceeds		Balance (credit (+) or debit (-))	
	s.	d.	s.	d.	s.	d.
Year 1927	15	7	15	1	-0	6
Year 1928	14	2	13	3	-0	11
December, 1927	14	9	13	10	-0	11
January, 1928	14	5	13	8	-0	9
February, 1928	14	3	13	5	-0	10
March, 1928	14	1	13	4	-0	9
April, 1928	14	7	13	4	-1	3
May, 1928	14	3	13	1	-1	2
June, 1928	14	7	12	11	-1	8
July, 1928	14	7	12	11	-1	8
August, 1928	14	4	12	11	-1	5
September, 1928	14	2	13	2	-1	0
October, 1928	13	9	13	3	-0	6
November, 1928	13	8	13	3	-0	5
December, 1928	13	10	13	9	-0	1
January, 1929	13	4	13	11	+0	7
February, 1929	13	4	14	1	+0	9
March, 1929	13	4	14	2	+0	10
April, 1929	13	8	13	10	+0	2
May, 1929	13	10	13	6	-0	4
June, 1929	13	11	13	5	-0	6
July, 1929	13	10	13	6	-0	4
August, 1929	13	8	13	8	-----	-----

*Number of persons employed and days worked—mines department particulars*

[Based on returns furnished by collieries]

Month	Average number of persons employed		Average mine days worked for normal week	
	1928	1929	1928	1929
January.....	970,000	904,000	4.99	5.24
February.....	963,000	916,000	4.83	5.42
March.....	952,000	931,000	5.38	5.60
April.....	938,000	939,000	4.98	5.05
May.....	934,000	940,000	4.71	4.87
June.....	921,000	935,000	4.52	4.83
July.....	907,000	930,000	4.35	4.75
August.....	895,000	928,000	4.57	5.05
September.....	896,000	934,000	4.84	5.09
October.....	897,000	-----	4.78	-----
November.....	897,000	-----	4.81	-----
December.....	898,000	-----	5.24	-----

NOTE.—Maximum numbers in 1929, 941,300 on May 4; numbers on Oct. 12, 1929, 937,700.

## OUTPUT AND EXPORTS OF COAL

The following figures give particulars for the years 1911-1913, 1913, 1925, 1927, 1928, and for the first nine months of 1925, 1927, 1928, and 1929:

	Output of coal	Export of coal
1911-1913 (average).....	273,200,000	67,500,000
1913.....	287,400,000	73,400,000
1925.....	243,200,000	50,800,000
1927.....	251,200,000	51,100,000
1928.....	237,500,000	50,100,000
First 9 months—		
1925.....	179,700,000	37,500,000
1927.....	189,400,000	39,000,000
1928.....	176,300,000	37,000,000
1929.....	190,000,000	40,100,000

The monthly tonnage of coal raised during each of the nine months ended September, 1925, 1928, and 1929, was as follows:

Month	1929	1928	1925
January.....	22,429,000	21,520,000	22,426,000
February.....	21,056,000	20,625,000	20,993,000
March.....	22,584,000	22,058,000	22,458,000
April.....	20,867,000	18,186,000	19,993,000
May.....	20,687,000	19,654,000	20,305,000
June.....	19,881,000	18,956,000	17,492,000
July.....	21,103,000	18,132,000	21,114,000
August.....	20,536,000	18,357,000	16,377,000
September.....	20,888,000	18,852,000	18,614,000
Total.....	190,031,000	176,340,000	179,766,000

*Output in September*

September	1929	1928	1927	1925
First week.....	5,202,000	4,794,000	4,657,000	4,255,000
Second week.....	4,840,000	4,577,000	4,979,000	4,112,000
Third week.....	5,119,000	4,715,000	4,987,000	4,444,000
Fourth week.....	5,219,000	4,755,000	4,920,000	4,896,000

## COAL EXPORTS

The tonnage of British coal exported during each of the 12 months ended September, 1925, 1928, and 1929, was as follows:

Month	1928-29	1927-28	1924-25	Month	1928-29	1927-28	1924-25
	<i>Tons</i>	<i>Tons</i>	<i>Tons</i>		<i>Tons</i>	<i>Tons</i>	<i>Tons</i>
October.....	4,630,000	4,141,000	4,933,000	April.....	4,756,000	3,722,000	4,360,000
November.....	4,231,000	4,127,000	4,759,000	May.....	5,328,000	4,487,000	4,652,000
December.....	4,184,000	3,886,000	5,167,000	June.....	4,883,000	4,346,000	3,734,000
Total..	13,045,000	12,154,000	14,859,000	July.....	5,845,000	4,163,000	4,442,000
January.....	4,473,000	3,905,000	4,366,000	August.....	4,977,000	4,274,000	3,272,000
February.....	3,890,000	4,097,000	4,344,000	September...	5,206,000	3,995,000	3,902,000
March.....	4,763,000	4,111,000	4,392,000	Total..	44,121,000	37,000,000	37,464,000

*Value per ton, f. o. b., of British coal exported*

Month	1928-29	1927-28	1924-25	Month	1928-29	1927-28	1924-25
	<i>S. d.</i>	<i>S. d.</i>	<i>S. d.</i>		<i>S. d.</i>	<i>S. d.</i>	<i>S. d.</i>
October.....	15 8	16 9	22 3	April.....	16 3	15 9	20 10
November.....	15 6	16 7	21 9	May.....	16 1	15 7	20 8
December.....	15 6	16 1	21 7	June.....	15 11	15 8	20 2
January.....	15 7	15 9	21 7	July.....	16 1	15 7	20 1
February.....	15 8	15 9	20 11	August.....	15 11	15 6	19 4
March.....	16 1	15 10	20 9	September...	16 2	15 4	18 9

## THE BRITISH COAL MINE ACT, 1930

[Special circular No. 744, Minerals Division, Bureau of Foreign and Domestic Commerce, Department of Commerce, Washington]

The operation of the British coal mines act of 1930 may be of great interest to the coal industry of the United States and serve to answer such questions as: To what extent are colliery amalgamations possible and beneficial? Is it advantageous to amalgamate collieries with other enterprises? and, What savings, if any, can be effected in distribution and administrative costs by cooperative marketing and selling schemes on extensive lines? Conditions analogous to those in the American industry—unbalanced production and sales, and keen interdistrict competition—prompt this short summary of the act and other recent British mining legislation.

## THE MINES ACT OF 1930

The mines act of 1930 prescribes the further reorganization of the coal industry and settles the lines on which reorganization is to take place, a central scheme operative for the country as a whole and district schemes respectively applicable to each mining district, for regulating and facilitating the production, supply, and sale of coal; a reorganization commission, with discretionary power as to the initiation and promotion of amalgamations of collieries, and a coal mines national industrial board to deal with labor. The industry remains in the control of the owners of the individual units, subject to the cooperative functions of the central council and district executive boards, respectively, to be constituted by the central scheme and district schemes.

More specifically, part 1 of the bill provides for the establishment of marketing schemes in the individual districts, to be administered locally by an executive board, and a national scheme under the control of a central council. Schemes put forward voluntarily by the colliery owners must be approved by the board of trade, and in the absence of a scheme, six weeks after the passing of the act the board may themselves formulate a scheme and impose it upon the coal owners affected. Schemes may be amended, or others substituted for them, provided that the consent of the board of trade is obtained.

The central council administering the central marketing scheme will allocate to each district a maximum production figure which may be amended for any particular period as circumstances dictate. The expenses of the council will be met from levies imposed on the various districts, which may also be required to pay penalties for contraventions of the central scheme. There is provision for arbitration in the event of disagreement between the executive board for a district and the council, or between district and district.

In the districts the appropriate executive board will fix a standard tonnage for each mine, taking into consideration physical characteristics and other special circumstances and, periodically, the percentage (quota) of the tonnage it is permissible to produce in a given period. A standard tonnage may be fixed for any class of coal and a separate quota may be fixed for it, but the quota must be the same proportion of the standard tonnage of coal for all mines in the district. Quota may be transferred from one mine to another. Minimum selling prices will be fixed, and penalties for contravention of the scheme may be imposed. Grievances of individual owners may be referred to arbitration. There is no provision in the act for a district levy to assist the sale of export coal or of any class of coal, but such a provision may be included in a district scheme with the assent of the central council of the board of trade and of Parliament.

A committee of investigation is to be appointed in each district in addition to a national committee of investigation. The chairman and other members of these committees will be appointed by the board of trade. One half of the members, other than the chairman, will represent the interests of consumers of coal and the other half, in equal numbers, the owners of the mines and the mine workers. The primary object of these committees is the protection of the consumer.

Where it appears that an amalgamation would be expedient for the more economical and efficient working of the coal industry, part 11 of the bill empowers the board of trade to require the owners of the respective undertakings to submit a scheme to the board, failing which the board may itself prepare a scheme.

Part 111 reduces the permitted number of working hours for miners from 8 to 7½, measured from the descent of the last man in the shift to the ascent of the first. A "spread-over" clause gives power to the owners and miners in a district, with the consent of the miners federation and of the mining association to redistribute the hours if desired, but the working day must not be over 8 hours or the hours in a week more than 45.

The bill also empowers the board of trade to constitute a coal mines national industrial board, to which will be referred disputes as to wages or other conditions of labor in a district which can not be

settled between the two parties. The board will inquire into the dispute and report to the owners and others concerned.

#### MARKETING SCHEME MAY HAVE INFLUENCED BILL

The operation of the "five counties (marketing) scheme" may have influenced part 1 of the bill, for which reason the following data extracted from its second annual report (year ended March 31, 1930) are given: Production of members during the year was 92,122,424 long tons (about 36 per cent of national production) upon which a levy of \$0.06 per ton of coal raised was made and this money, plus funds derived from penalties, supplied a fund from which the export coal trade was assisted up to \$0.80 a ton, the total expenditures on this account amounting to \$4,334,167. The development of the export trade from the Humber ports, through which member shipments moved, is interesting. During the year ended March 31, 1928, exports totaled 2,566,733 tons, during the year ended March 31, 1929, 4,728,534 and during the year ended March 31, 1930, the second year of the operation of the plan 7,018,712 long tons. Bunker coal is not included in these figures. The administration expenses of the organization were about one-fifth of a cent per ton of coal raised by the members during the year.

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#### REPORT OF THE ROYAL COMMISSION, NEW SOUTH WALES— RESUMED

##### UNITED STATES OF AMERICA

The United States of America in recent years has produced a little less than one-half of the entire world production, which averages just under 1,200,000,000 tons.

In normal years the United States of America dispatches the great bulk of surplus coal across the northern frontier to Canada. Owing to the distance of the mines from the seacoast and to the cost of transport, there is as a rule no competition in European countries. Exports indeed are relatively small, amounting in normal years to about only 4½ per cent of production and of these exports about four-fifths are consigned to Canada. The coal industry is thus largely self-contained, and only in exceptional years has it had any important direct contact with countries overseas.

But the ability of the industry to respond to any sudden demand is such that, whenever prices rise above a certain point, or whenever one of the great European producers is temporarily disabled, the United States can throw upon the markets all the coal required. The present capacity is thus extremely elastic.

##### PRODUCTION

The production of coal in the United States since 1909–1913 has been as follows:

	Metric tons		Metric tons
1909–1913 (average)-----	464, 587, 000	1924-----	518, 556, 000
1913-----	517, 057, 000	1925-----	527, 662, 000
1920-----	597, 165, 000	1926-----	601, 214, 000
1921-----	459, 352, 000	1927-----	544, 725, 000
1922-----	432, 681, 000	1928-----	516, 600, 000
1923-----	596, 466, 000		

## PRICES

The average value per ton of coal (bituminous) raised at the pit since 1909-1913 has been as follows:

	s.	d.		s.	d.
1909-1913 (average)-----	5	3½	1923-----	13	1
1913-----	5	6	1924-----	11	1
1919-----	12	7	1925-----	9	6
1920-----	22	11	1926-----	9	6
1921-----	16	9½	1927-----	9	1
1922-----	15	3½	1928-----	8	7½

A comparison with other countries is shown in Table A attached. (See page 43.)

## ORGANIZATION

The bulk of the anthracite production of the United States of America is concentrated in the hands of 8 companies out of a total of 174 in operation, which produced 70 per cent of the output in 1920. They are closely connected with one another and with the railroad interests. The United States Coal Commission published in 1925 its report on an inquiry into their activities and recommended greater publicity.

On the other hand, the 12,122 undertakings engaged in the bituminous coal industry are, generally speaking, competitive.

## AMALGAMATIONS AND CLOSURE OF MINES

In bituminous mines, a number of small consolidations have taken place. Three district consolidations involving 15,000,000 to 50,000,000 tons yearly have been discussed, but failed because of disagreement among the companies concerned. All amalgamations effected have been through private initiative by agreement among stockholders of the participating companies. In the meantime economic pressure has eliminated a large number of mines. Between 1923 and 1928 prices at mines fell off one-third. The majority of companies lost heavily and many failed. Commercial mines numbering 2,881 were forced to close. Annual mine capacity was reduced by 21,000,000 tons and 183,000 men were discharged. As a result, the mines remaining in operation worked somewhat more steadily and more of the business was concentrated in the larger companies. However, employment is still very irregular, the average number of days operated in 1928 being only 203. The number of mines in operation is still very large, in 1928 about 6,450 commercial mines being operated by about 5,000 companies. The largest commercial company produces only 4 per cent of the total output.

In the anthracite mines, a merger of two of the largest companies was effected in 1929, the combined company, however, controlling less than one-fifth of the total output of the country. Under the pressure of competition, individual companies have closed the less efficient mines and have attempted to reduce costs.

## MECHANIZATION

In the bituminous mines, there is no organized plan of rationalization, but widespread efforts have been made by individual companies to reduce costs by mechanizing mines, and to improve the product by

mechanical screening, washing, and air cleaning. This movement finds expression in national committees on coal mine mechanization, organized by the American Mining Congress, a voluntary trade association. Principal emphasis is laid on improvement in underground management and the introduction of loading machinery, scrapers, and face conveyors. The tonnage loaded mechanically without hand shoveling increased from 2,000,000 tons in 1923 to 15,000,000 tons in 1928. The tonnage mined by power shovels in open pits is also increasing, now amounting to 20,000,000 tons.

The following table shows the coal mined by undercutting machines:

*Coal mined by undercutting machines, 1916-1927*

ANTHRACITE

Year	Machines in use	Quantity mined by undercutting machines (net tons)		Per cent of total fresh-mined product cut by machines
		Total	Average per machine	
1916-----		1,642,416		
1917-----		1,745,735		
1918-----	176	1,857,514	10,554	2.1
1919-----	( <sup>1</sup> )	1,575,205	( <sup>1</sup> )	1.9
1920-----	139	938,073	6,749	1.1
1921-----	114	579,145	5,589	1.1
1922-----	82	502,793	6,132	1.0
1923-----	162	1,208,542	7,460	1.4
1924-----	212	1,423,884	6,716	1.7
1925-----	159	941,189	5,919	1.6
1926-----	90	931,650	10,352	1.2
1927-----	138	1,171,888	8,492	1.5

<sup>1</sup> Not available.

BITUMINOUS COAL

1913-----	16,379	242,421,713	14,801	
1914-----	16,507	218,399,287	13,231	
1915-----	15,692	243,237,551	15,501	
1916-----	16,198	283,691,475	17,514	
1917-----	17,235	306,396,127	17,777	
1918-----	18,463	323,931,133	17,545	55.9
1919-----	18,959	276,019,799	14,559	59.2
1920-----	19,103	339,813,476	17,788	59.8
1921-----	19,618	272,702,389	13,901	65.6
1922-----	20,436	267,032,931	13,067	63.2
1923-----	21,229	377,435,543	17,779	66.9
1924-----	18,660	336,271,335	18,021	69.5
1925-----	17,551	366,725,758	20,895	70.6
1926-----	17,466	410,912,680	23,526	71.7
1927-----	17,388	374,040,637	21,511	72.2

OUTPUT

As a result of the mechanization of bituminous mines, the output (in net tons) per man employed per day increased as under. Particulars are also shown for anthracite mines.

	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928
Total bituminous-----	3.78	3.84	4.00	4.20	4.28	4.47	4.56	4.52	4.50	4.55	4.73
Anthracite-----	2.29	2.14	2.28	2.09	2.31	2.21	2.00	2.12	2.09	2.15	-----
Grand total-----	3.45	3.41	3.65	3.55	3.89	3.91	3.81	4.04	3.92	3.96	-----

## CONTROL OF OUTPUT—PRICES AND MARKETING

Discussion of rationalization deals very little with marketing or distribution. No Government action has been taken to control output or marketing in either the bituminous or anthracite mines, and no action by the industry, partly because restriction of production and price agreements are forbidden by antitrust laws.

## LABOR CONDITIONS

In bituminous mines, since 1923, costs of production have been reduced greatly, very largely because of wage reductions. Conditions have weakened the position of the miners' union. In 1923 the union had wage contracts negotiated by collective bargaining with employers covering 70 per cent of the bituminous tonnage. In 1929 wage contracts covered only 20 per cent of the tonnage, the remaining 80 per cent being nonunion, employers determining working conditions and wages. Nonunion mines paying lower wages have a competitive advantage. In mines still negotiating with the union the day wage rate has been reduced by agreement from \$7.50 per day to about \$6 or even \$5, depending on the district. Discharged miners have found work where they could, sometimes being assisted by a local employment agency, but without unemployment insurance derived from the industry or the Government.

The method of fixing wages in fields where the union is recognized is by collective bargaining. Wage agreements run for fixed periods from one to three years and specify wage rates and working conditions to remain without change during the life of the agreement. There are provisions for settling individual grievances and disputes over interpretation, but no machinery exists for arbitration of changes in wage rates or working conditions. There are no arbitration courts in the coal industry nor wage tribunals constituted by law.

Wages in the anthracite industry are fixed by collective bargaining between companies and mine workers, who are fully organized. The present wage contract has a life of five years and expires in September, 1930. It fixes wage rates and working conditions for the entire period, subject to possible change by complicated arbitration machinery which thus far neither party has seen fit to invoke.

## WELFARE

There are no State-supported miners' welfare funds, although most States have accident compensation laws applying to all wage earners. Many local and district unions have small benefit funds covering sickness and funeral expenses, and a few have small mutual insurance schemes. Very few large nonunion companies in either the bituminous or anthracite industry have independent welfare funds in the management of which the miners are allowed a voice.

## PROFIT-SHARING SCHEMES

Profit-sharing schemes are in operation at only a few small individual companies in bituminous mines, but do not exist in the anthracite industry.

## GENERAL

(a) *Bituminous*.—In bituminous mines, which produce 500,000,000 tons yearly, the situation is one of excess mine capacity and labor force, resulting in destructive competition between thousands of mines in 92 districts and 26 States, some of which recognize the miners' union, while some are nonunion. From 1916 to 1923, strikes and shortages of transport kept prices high and wages increased. During this period the State and Federal Governments frequently intervened to settle wage disputes and control coal distribution in order to protect consumers. Since 1924 prolonged depression has prevailed. Fuel economy and competition of oil and water power have checked the demand for coal. Transport facilities have been ample and the several strikes which have occurred have caused no shortage of coal. During this period the Federal Government has held aloof. There have been some hearings by congressional committees, and bills have been introduced proposing regulatory legislation which have been supported by mine workers but opposed by employers, and the bills have never gone to a vote. The present prospects for legislation are exceedingly remote. Thus the Government has left the industry to work out its own problem.

(b) *Anthracite*.—In the Pennsylvania anthracite industry, which produces 80,000,000 tons, 150,000 men are employed. The anthracite industry is dominated by a small group of powerful companies. Destructive competition between producers was eliminated long ago, and until recently the mines worked steadily, and wages and profits were increasing.

Anthracite is the standard house fuel in northeastern United States. Since 1926, however, the consumption has declined because of the low prices of bituminous coal and the competition of coke and automatic oil and gas heating. Profits are declining and the working time of the mines has fallen to 217 days per year as against a former average of 270 days. As in the case of bituminous mining, the Government since 1923 has declined to intervene in wage disputes and has encouraged the industry to solve its own problems.

Anthracite companies have cooperated to improve the standards of cleaning and sizing of coal and have organized a cooperative service to consumers. This service does not handle sales but conducts cooperative advertising, advises dealers and consumers on the selection of heating equipment and methods of combustion, and deals with complaints of unsatisfactory service. Companies feel this service in the interests of consumers is helpful in holding the market against competition of other fuels.

TABLE A.—Average value per ton raised at pit

[Weighted average value of coal sold from the mine, including the estimated value of the coal used on the mines and that supplied to household employees]

Period	United States (bituminous)		Great Britain		Ruhr		France		Belgium	
	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.
1909-1913.....	5	3½	8	9	10	9½	12	8½	12	10
1913.....	5	6	10	1½	11	9½	13	6¼	14	11
1919.....	12	7	27	4	11	9½	35	11	38	2½
1920.....	22	11	34	7	13	7	32	0	34	3¼
1921.....	16	9¼	26	2¼	10	5	32	11¼	33	8¼
1922.....	15	3½	17	7¼	-----	-----	28	2	27	1¼
1923.....	13	1	18	9¼	-----	-----	20	4	24	8¼
1924.....	11	1	18	10	20	1	19	4	22	1
1925.....	9	6	16	4	14	5	16	1½	18	4
1926.....	9	6	19	7	13	11½	13	11½	17	3
1927.....	9	1	14	7	14	4½	16	1	17	3
1928.....	8	7½	12	10	14	8	-----	-----	-----	-----

TABLE B.—Production of coal and lignite (in terms of coal) in metric tons

Country	1913	1924	1927	1928 <sup>1</sup>
Germany <sup>2</sup> .....	209,000,000	-----	-----	-----
Do. <sup>3</sup> .....	160,000,000	146,000,000	187,000,000	188,000,000
Belgium <sup>3</sup> .....	23,000,000	23,000,000	27,000,000	27,000,000
France <sup>3</sup> .....	44,000,000	44,000,000	52,000,000	52,000,000
Poland <sup>3</sup> .....	41,000,000	32,000,000	38,000,000	41,000,000
United Kingdom.....	292,000,000	271,000,000	255,000,000	241,000,000
United States of America.....	517,000,000	519,000,000	545,000,000	517,000,000

<sup>1</sup> Estimate of provisional figures.<sup>2</sup> Pre-war territory.<sup>3</sup> Postwar territory.

